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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/002,165	12/05/2001	Ron Johan	Q67587	2281

7590 09/02/2005  
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EXAMINER ABELSON, RONALD B	
ART UNIT 2666	PAPER NUMBER

DATE MAILED: 09/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/002,165

Applicant(s)

JOHAN ET AL.

Examiner

Ronald Abelson

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2666

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 February 2002 and 05 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-13 and 16-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8-13 and 16-18 is/are rejected.
- 7) ☐ Claim(s) 7 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 2/14/2002.
- 4) ☒ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

***Claim Objections***

1. Claim 2 objected to because of the following informalities:

On line 2, "different" should be changed to "that is a different" for clarity. Appropriate correction is required.

Claim 8 is objected to because of the following informalities: On line 2, "the buffer" should be changed to "and a buffer for". Appropriate correction is required.

Claim 10 is objected to because of the following informalities: On line 3, "a multiplexer" should be changed to "including multiplexing". Appropriate correction is required.

Claim 11 is objected to because of the following informalities: On line 3, "second converter" should be changed to "converter". Appropriate correction is required.

Claim 17 is objected to because of the following informalities: On line 1, "lines" should be changed to "line". On line 3, "the network" should be changed to "a network". Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 10, 13, 16, and 17 are rejected under 35 U.S.C. 102(e) as being anticipated by Christie (US 2004/0085975).

Regarding claim 1, Christie teaches a method for converting a communication in a first communication protocol (fig. 2 box 220, 222, convert analog signals, [0037]) to a second protocol (digital signal based on GR-303, [0037], hybrid GR-303 signaling, [0064]). Note, the protocol of the analog network is different from the protocol of the digital GR-303/hybrid GR-303 network. Regarding GR-303/hybrid GR-303 being digital (Christie: [0037]).

Christie teaches the first protocol including information (analog signals, [0037]) and signaling (hybrid GR-303 signaling, robbed bit, on-hook/off-hook, [0064]).

Christie teaches converting information into a digital stream (fig. 2 box 220, 222, convert analog signals into a digital signal, [0037]).

Christie teaches incorporating the signaling in the digital stream using bit robbing (robbed-Bit ABCD signaling for on-hook/off-hook, [0064]). Note, in Christie the "remote digital interface" [0064] is the "remote digital terminal" (fig. 2 box 220, 222).

Regarding claims 10 and 13, Christie teaches an arrangement (fig. 2 box 220, 222) for converting at least first signals (analog signals, [0037]) and second signals (on-hook/off-hook, [0064]) to a common protocol (fig. 2 box 220, 222, convert analog signals into a digital signal based on GR-303 standard, [0037], hybrid GR-303 signaling employs robbed-Bit ABCD signaling for on-hook/off-hook, [0064]), the first signal having a first protocol different from the common protocol. Note, the protocol of the analog network is different from the protocol of the digital GR-303/hybrid GR-303 network.

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Christie teaches the arrangement includes multiplexing the second signal into a bit stream and incorporating the first signal (converts the analog signals into a multiplexed digital signal, [0037]) into the bit stream carrying the second signal by bit robbing (robbed-Bit ABCD signaling for on-hook/off-hook, [0064]).

Regarding claim 16, Christie teaches a service agile communication arrangement to make available a plurality of services to a customer's premises (fig. 2, conversation, fax, [0054]).

Christie teaches at the network access side of the customer's line, a network line interface (fig. 2 box 200) adapted to transmit and receive information (fig. 2 connections 230, 232, [0038, 0040]) and signaling (fig. 2 links 231, 233, [0038, 0040]) according to a chosen communication protocol (GR-303, [0040]).

Christie teaches at the customer premises side of the line, a customer line interface (fig. 2 box 220, 222) adapted to transmit and receive information and signaling according to the chosen communication protocol (fig. 2 box 220, 222, GR-303, [0037]).

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Christie teaches the customer line interface (fig. 2 box 220, 222) including means to convert between information and signaling protocol of the service (analog signals, [0037]) and the chosen communication protocol (convert the analog signals to digital signal based on GR-303 standard, [0037], hybrid GR-303, robbed-bit ABCD signaling for on-hook/off-hook, [0064]). Note, paragraph [0064] clearly shows the on-hook/off-hook signaling from the analog telephones is transmitted to the remote digital terminals.

Regarding claim 17, the network line interface (fig. 2 box 200) converts between the chosen protocol (GR-303, connections 230 and 232 are based on the GR-303 format, [0038]) and a network protocol (connection 240 SONET connection carry ATM cells, [0038]) for communication with a network (fig. 2 BROADBAND NETWORK).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary.

Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 5 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kozdon (US 6,385,192) in view of Bolon (US 5,822,420).

Regarding claim 5, Kozdon teaches an arrangement for converting (fig. 3 box 106, 108, 110, col. 5 lines 5-10) a communication in a first protocol (fig. 3 box 102, DTMF, col. 4 lines 23-25) to a second protocol (fig. 3 box 112, computer



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network, Internet, col. 5 lines 5-10). Note, given DTMF is analog, the protocol of the packets (original data packet, confirmation packet, col. 4 lines 57-61) being transmitted over the Internet is different than DTMF.

Kozdon teaches the communication including information (fig. 3 box 106, col. 4 lines 38-42) and signaling (fig. 3 box 108, col. 4 lines 42-45).

Kozdon teaches the arrangement including a splitter (fig. 3 box 104, col. 4 lines 36-38) separating the information onto a first information path (fig. 3 box 106, col. 4 lines 38-42), and the signaling onto a first signaling path (fig. 3 box 108, col. 4 lines 42-45).

Kozdon teaches a multiplexer arrangement (fig. 3 box 110) applying the information to a digital stream incorporating the signaling into the digital stream (original data packet and confirmation packet are combined, col. 4 lines 57-61).

Kozdon is silent on bit robbing.

Bolon teaches bit robbing for on-hook and off-hook detection (robbed-bit signaling, col. 1 lines 59-63).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of Kozdon by transmitting the data that represents on-hook and off-hook signals that is outputted from the DTMF Signal Detector (fig. 3 box 108) via bit

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robbing. This modification can be performed by representing the on-hook and off-hook signals as ABCD codes (Bolon: col. 1 lines 59-63). The suggestion to modify is a hybrid signaling / robbed-bit signaling is a technique for transmitting on-hook and off-hook signals. This will benefit the system by providing a method for transmitting on-hook and off-hook signals over the Internet.

Regarding claim 9, including a controller controlling the multiplexer arrangement (Kozdon: fig. 3 box 110, col. 4 lines 57-61). Regarding a controller, note the combination logic circuit is responsible for "controlling" the process of multiplexing the compressed DTMF signal and the confirmation packet (Kozdon: col. 4 lines 57-61).

7. Claims 6 and 12 rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Kozdon and Bolon as applied to claim 5 and 9 respectively above, and further in view of Freeman (US 5,390,232).

The combination is silent on a network response emulator responsive to the signaling to send an appropriate response.

Freeman teaches a network response emulator responsive to the signaling to send an appropriate response (fig. 4 box 407, col. 4 line 62 - col. 5 line 5, upon receiving call initiation

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signals generates switching and signaling messages in order to process the call).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination of Kozdon and Bolon by connecting the DTMF signal detector (Kozdon: fig. 1 box 108) to a switching fabric emulator. This modification can be according to the teachings of Freeman. The suggestion for the modification is the emulator upon receiving call initiation signals generates switching and signaling messages in order to process the call (Freeman: (col. 5 lines 1-5)).

8. Claim 8 rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Kozdon and Bolon as applied to claim 5 above, and further in view of Furukawa (US 6,044,133).

Regarding claim 8, in addition to the limitations previously listed, the multiplexer arrangement includes a multiplexer circuit / combination logic circuit (Kozdon: fig. 3 box 110, combination logic circuit, col. 4 lines 57-61).

The combination is silent on a buffer for storing the signaling data prior to multiplexing.

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Furukawa teaches a buffer for storing the signaling data (fig. 8 box 200, off-hook, memory of CCD 200, col. 17 lines 13-18).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination of Kozdon and Bolon by placing a buffer within the combination logic for storing received off-hook and on-hook signals (Kozdon: fig. 3 box 110). This modification, storing signaling data, would benefit the system by enabling the synchronization of the speech and DTMF tones sent to the combination logic (Kozdon: fig. 3 box 106, 108, 110).

9. Claim 2-4 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over of Christie as applied to claim 1 and 10 respectively above, and further in view of Goldman (US 6,134,235).

Regarding claim 2, although Christie teaches signaling, the reference is silent on the signaling is carried on a signaling channel, different from the information channel carrying information.

Goldman teaches the signaling is carried on a signaling channel, different from the information channel carrying

information (fig. 1 box 112 SS7, out-of-band signaling, col. 1 lines 26-28, col. 9 lines 8-12).

Regarding claim 3, in addition to the limitations previously addressed, Christie teaches the information is in the voice band channel (fig. 2 see telephones 210-215).

Although Christie teaches signaling, the reference is silent on the signaling is in an out-of-band channel.

Goldman teaches signaling in an out-of-band channel (fig. 1 box 112 SS7, col. 1 lines 26-28, col. 9 lines 8-12).

Regarding claim 4, in addition to the limitations previously discussed, Christie teaches the information is in the form of analog signals (fig. 2 box 220, 222, remote digital terminals convert analog signals, [0037]).

Christie is silent on the signaling is in the form of a digital signal.

Goldman teaches the signaling is in the form of a digital signal (fig. 1 box 112, SS7, col. 1 lines 43-44).

Therefore, regarding claim 2-4, it would have been obvious to one of ordinary skill in the art, to modify the system of the Christie by transmitting the signaling data over an SS7 network.

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This modification can be performed according to the teachings of Goldman. The suggestion for the modification is to provide a separate voice network and a signaling network (Goldman: fig. 1 box 111, 112, col. 9 lines 10-12). This would benefit the system by allowing it to be more easily integrated in POTS systems where separate voice and signaling networks exist.

Regarding claim 11, in addition to the limitations previously discussed, Christie teaches the second signal has a second protocol different from the common protocol (fig. 1 box 220, 222, remote digital terminals convert the analog signals [0037], hybrid GR-303 signaling employs robbed-bit ABCD signaling for on-hook/off-hook, [0064]), the arrangement including a converter to convert the second signal to the common protocol (hybrid GR-303, [0064]). The examiner corresponds the applicant's converter with the process of converting the input on-hook/off-hook signaling of the remote digital terminals into their hybrid GR-303 signaling representations.

Christie is silent on the second signal has a second protocol different from the first protocol.

Goldman teaches the second signal has a second protocol different from the first protocol (fig. 1 box 112 SS7, col. 1 lines 26-28, col. 9 lines 8-12). Note the signaling protocol

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(SS7, fig. 1 box 112) is different from the protocol of the first protocol (Voice, fig. 1 box 112) since SS7 is a signaling protocol.

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the Christie by transmitting the signaling data over an SS7 network. This modification can be performed according to the teachings of Goldman. The suggestion for the modification is to provide a separate voice network and a signaling network (Goldman: fig. 1 box 111, 112, col. 9 lines 10-12). This would benefit the system by allowing it to be more easily integrated in POTS systems where separate voice and signaling networks exist.

10. Claim 18 rejected under 35 U.S.C. 103(a) as being unpatentable over Christie as applied to claim 16 above, and further in view of Sharper (US 6,546,024).

Christie is silent on the chosen protocol being IDSL protocol 2B1Q.

Sharper teaches IDSL protocol 2B1Q (col. 1 lines 35-36).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of Christie by augmenting the system to include a copper line connections for transporting IDSL traffic between the remote digital terminals (fig. 2 box

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220, 222) and the broadband system interface (fig. 2 box 200) and using the 2B1Q protocol for transmission between the remote digital terminals and broadband system interface. The suggestion to modify is IDSL 2B1Q may be transported over copper (Sharper: col. 1 lines 35-36). Note, telephone signals being inputted into the remote digital terminals are analog (Christie: [0037]) and analog signals are often transported over copper lines. This would benefit the system of Christie by allowing for IDSL traffic to be transmitted over existing copper lines.

#### ***Allowable Subject Matter***

11. Claim 7 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. See applicant's figure 4.

#### ***Prior Art of Record***

12. Krishnamurthy (US 6,760,343) teaches SS7 is a digital network (col. 1 lines 13-16).



**Conclusion**

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ronald Abelson whose telephone number is (571) 272-3165. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on (571) 272-3174. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*RA*  
Ronald Abelson  
Examiner  
Art Unit 2666

*Ronald Abelson*

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